

The environmental intelligence layer for orbital operations

A satellite is shown in space, illuminated from the right. It has a rectangular body with various panels and a prominent antenna extending from the right side. The background is a dark, starry space.

for terrestrial systems, Earth orbit, cislunar space, and the lunar surface.

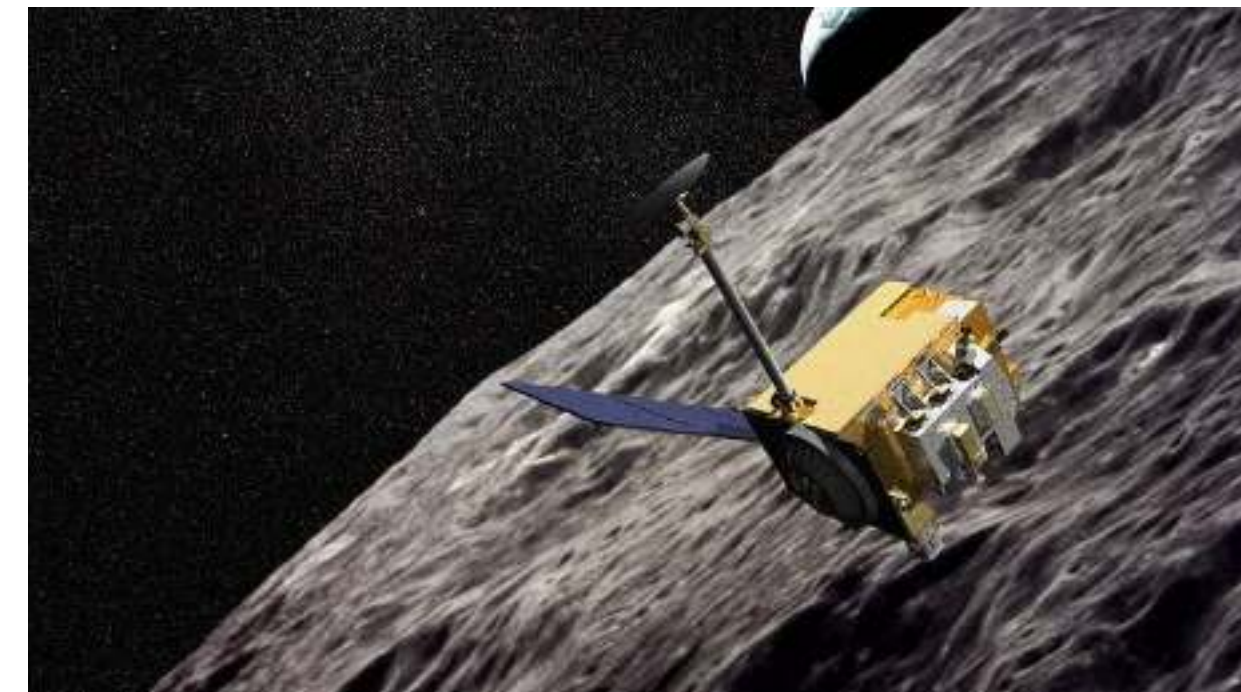
Mission Space turns space weather from a scientific afterthought into an operational input.

We combine in-orbit sensors, public & proprietary data, and physics-driven models to tell operators when conditions will degrade spacecraft performance, increase drag, raise charging risk, disrupt comms, or elevate radiation exposure.

Constellation

Real-time, multi-point coverage of polar cusp and SAA

Moon orbiter and surface charge & dust monitoring



Platform

Mid-term model with 200% accuracy over current solutions, customizable alerts, APIs



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Why now?



Legacy infrastructure is **no longer sufficient**: short warning windows, no localization, fragmented datasets

- ⚠ Operational POES satellites: NOAA-15 (1998), NOAA-19 (2009) — **decades old**
- ⚠ METOP-A (2012) decommissioned in 2021; B and C are aging, key instruments **already offline**
- ⚠ NASA TRACERS (2025): low-energy only; limited downlinks — model input, not **nowcasting**
- ⚠ Main SW data still comes from **ACE** (L1, **launched 1997**)
- ⚠ Frequent **gaps in coverage** — same with other L1 missions



Mission Space Enables Orbital Infrastructure



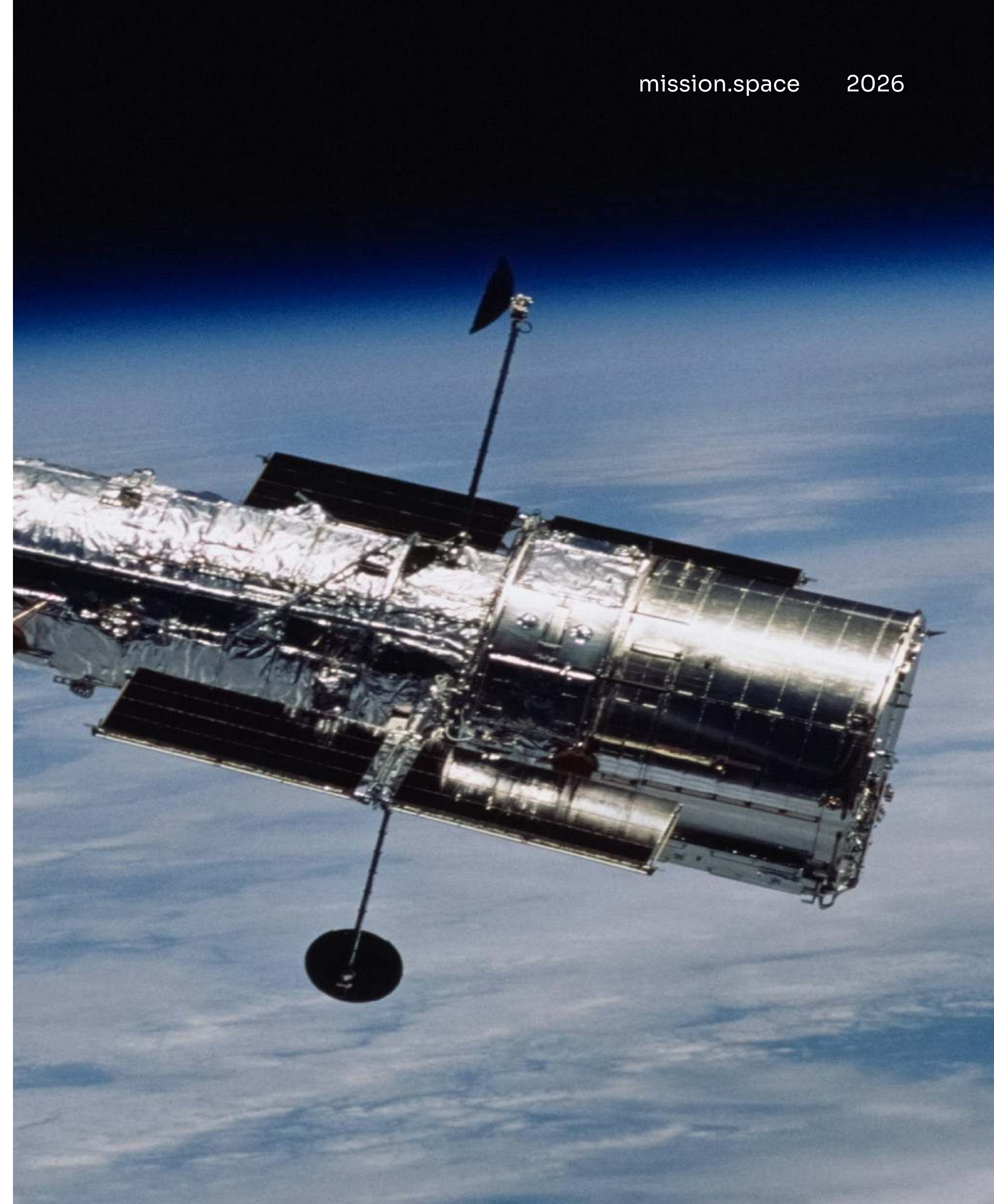
\$15.9B+ committed or budgeted across **Orbital Data Centers**, Commercial Stations, **Lunar** Systems, and ISAM — before compute capex.



Shared exposure: radiation, charging, drag variability, comms disruption.

Operational effect: resets, propellant loss, degraded hardware life, lost operating windows.

As orbital infrastructure scales, environmental intelligence becomes a required control layer.



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Real-time + Short & Long Term Forecasts Platform



Mission Space's platform provides localized, tailored alerts so operators can:

- ⚠️ Protect spacecraft electronics: **switch to safer modes**, pause sensitive payloads, delay firmware uploads
- ⚠️ **Plan maneuvers and conjunction screening** using predicted LEO density spikes
- ⚠️ Manage charging risk with **configuration and attitude changes**
- ⚠️ **Schedule comms**, downlinks, and polar operations outside disruption windows, reroute or adjust altitude on polar tracks
- ⚠️ **Moon/Mars**: time EVAs and critical actions around SEP/ radiation peaks, protect electronics and crews with shielding + scheduling





✓ SCALING LOGIC

Launches build the data layer. The data layer improves forecast reliability. Reliability unlocks larger contracts. Larger contracts drive ARR.

✓ 2026–2027

- Early constellation
- <10 live sensors
- Satellite operators and structured pilots
- ~\$7M subscription run-rate + pilots

✓ 2028–2029

- Reliability threshold crossed
- Up to 20 live sensors
- Repeatable operational decisions
- Contract expansion across scope, seats, and geographies
- Insurance and infrastructure begin activating
- ~\$21M subscription run-rate + contracts

✓ 2031+ base case:

- 16 launches / 46 live sensor sets
- ~100 paying subscription clients
- ~\$30k MRR per client
- ~\$50M subscription run-rate
- Institutional-grade forecasting
- Multi-year enterprise contracts
- Portfolio-level licensing

**70%+ OF REVENUE
FROM
SUBSCRIPTIONS**

Financial Outlook

+ the Moon & Mars



Space Weather Platform (\$500MM ARR)

Combine satellite, lunar, and Martian data into a unified commercial network serving government, defense, and new-space operators.

Global Expansion

Multi-Planetary Data Network

New space players

2030+

(\$10MM ARR)

Government Partnerships & Commercial Integration

NASA, NOAA, and DoD contracts

Orbital Data Centers

Data for commercial missions and ML

Equip commercial missions with our instruments

24 sats



2027-2028

Filling the Gaps (\$400k ARR)

Deployment, Validation & Early Commercialization

Launched payloads

Data Platform Launch

First customers

3 sats



2025-2026

Leadership



Advisor network



MARY GLAZ
CEO & CO-FOUNDER



Aerospace grad, Serial Entrepreneur, Holder of both an EB1 (green card for outstanding talents) and a Global Talent UK visa, 10 years experience in deep tech business, Private Pilot



LISA VALENCIA
CTO



Project Manager, Systems Engineer, and Electrical Engineer. She worked at NASA for 35 years as a project manager for the Autonomous Flight Termination System, AFTS, in the Engineering Directorate at NASA's Kennedy Space Center



ALEX SHIROBOKOV
COO & CO-FOUNDER



MsC in Economics, Serial Entrepreneur, ex-EY (Strategy consulting, including Aerospace sector), co-founder of CPM software company (10M+ ARR), Private Pilot



EKATERINA LOMAKINA
HEAD OF ML DEP



PhD in Machine Learning, ETH Zurich. Over 30 works in peer-reviewed international journals and conferences. 10+ years of industry experience developing statistical models and production-scale AI models, including 7+ years at Google, with 4+ years at Google



TOM MARROTA
GR ADVISOR



CEO and Founder of The Spaceport Company. Served the United States as a diplomat in Europe, Africa, and Iraq, helped write spaceport regulations for the FAA, and helped set up Astra's first Florida launch pad in record time. The Spaceport Company holds two active DOD contracts, has launched five rockets at sea, and owns a specialized launch pad vessel.



JEAN DIEDERICH
GR ADVISOR



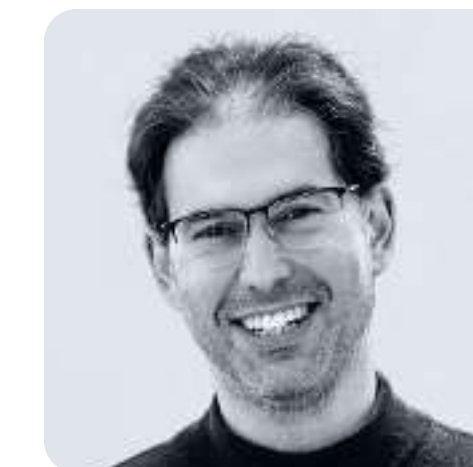
30+ years experience in the Financial Sector & Regulation; Public Sector- (Local Administrations & European Institutions). Program- and Project Management



ENRICO CAMPOREALE
ADVISOR, ML FOR SPACE
EX-NOAA



Research Scientist, University of Colorado Boulder. Co-PI of NASA Center of Excellence SWORD. PI of "Ensemble Learning for Accurate and Reliable Uncertainty Quantification". PI of "Probabilistic forecast of Dst index for thermospheric models" Co-PI of "Global Evolution and Local Dynamics of the Kinetic Solar Wind". Chair of ML-Helio conference



CARL SCHNEIDER
SCIENTIFIC CONSULTANT



SnT UL PhD in Astrophysics 20+ years of experience in physics, computer science, artificial Intelligence Over 30 works in peer-reviewed international journals and conferences

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NASA Goddard Space Flight Center



MARILLIA SAMARA
RESEARCH AST,
FIELDS & PARTICLES



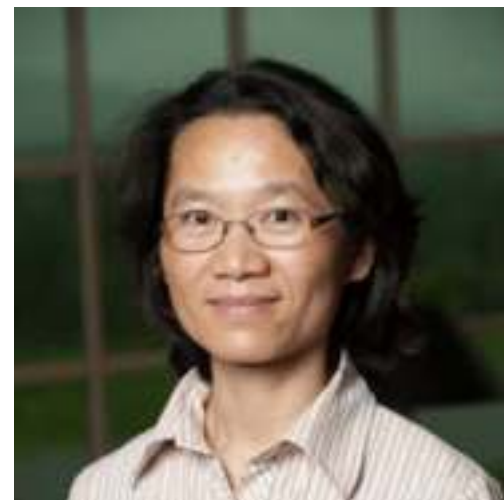
Research astrophysicist at NASA's Geospace Physics Laboratory. She specializes in ionospheric electrodynamics and ionosphere-magnetosphere coupling, utilizing both suborbital and orbital particle and wave instruments.



ROBERT G. MICHELL
RESEARCH AST,
FIELDS & PARTICLES



30+ years experience in the Financial Sector & Regulation; Public Sector- (Local Administrations & European Institutions). Program- and Project Management



LI-JEN CHEN
RESEARCH AST,
FIELDS & PARTICLES



Currently serves on the MMS and TRACERS missions to advance understanding of magnetic reconnection and its multi-scale impact on plasma heating, acceleration, and planetary magnetosphere dynamics.



Traction: Customer, and Contract Progress

Hardware and software development ▪ government contracts ▪ MoUs and LOIs

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Government & Institutional Traction



Successful demos. Active engagement.
Contracts to be sign in Q2.

- ✓ DoW: EM, JCO, and Golden Dome
 - Active engagement and 1:1s
 - Confirmed interest
- ✓ NOAA / Office of Space Commerce
 - \$2 M contract Phase I
 - Supporting Letter
- ✓ NASA / Lunar Mission
 - MOU with Zeno Power
 - Supporting Letter from NASA Engineering Safety team
 - PRISM proposal Phase II
- ✓ LSA / ESA
 - LuxIMPULSE \$2.5 M contract
 - ESA / subcontractors



First Customers & MOUs



Exclusive reseller for Korea



kayhan. space

20+ LOIs & MOU

Product and Mission Updates

A satellite is shown in space, illuminated from the right, against a dark background with stars. The satellite has a rectangular body with various instruments and antennas.

Hardware, software, and missions across LEO and the Moon

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CEO Mary Glaz

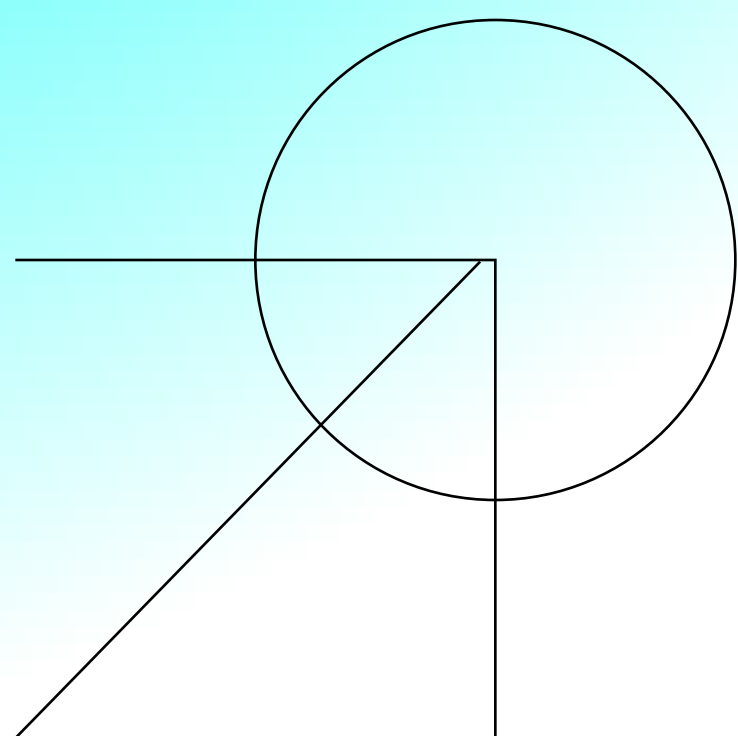
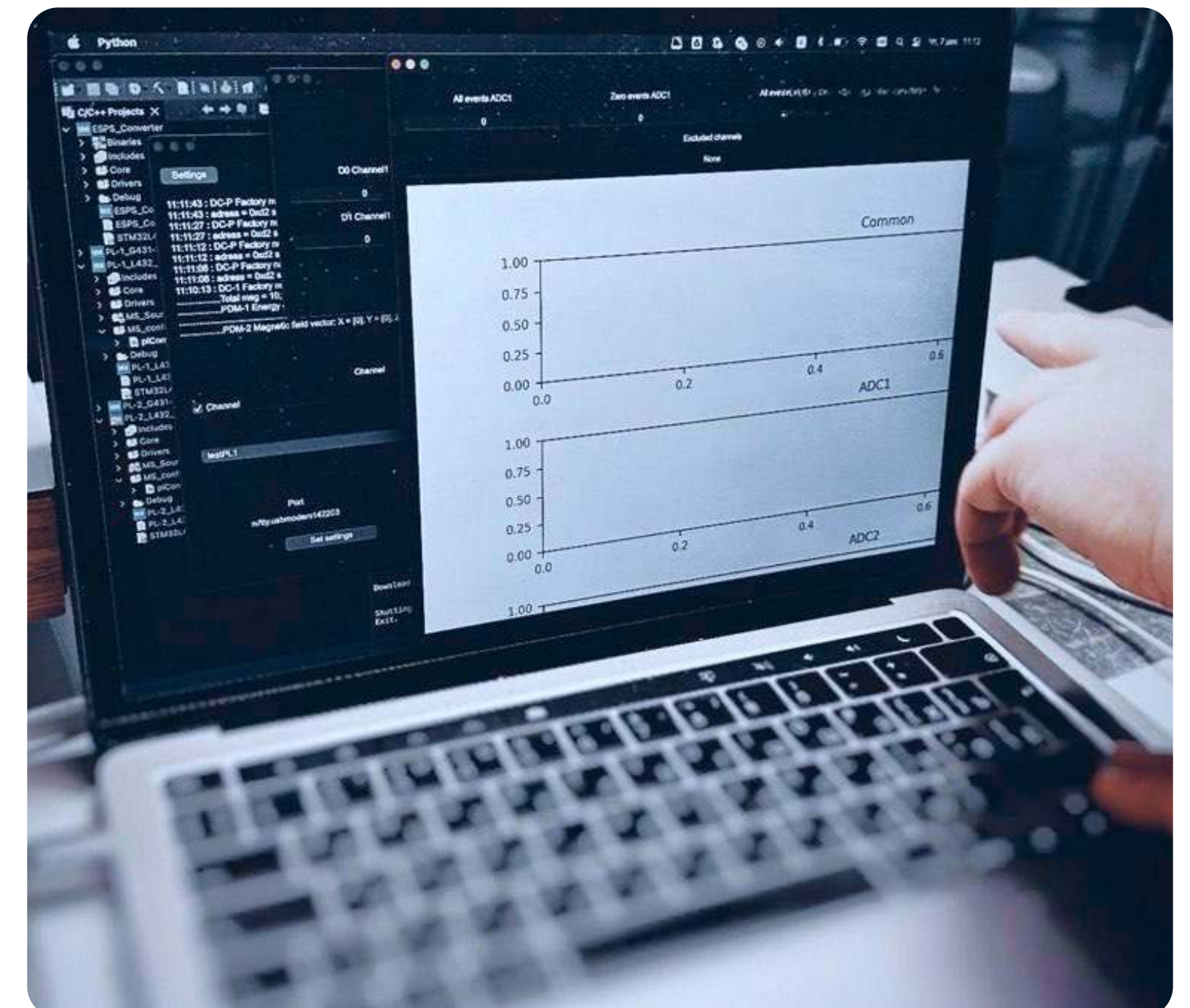
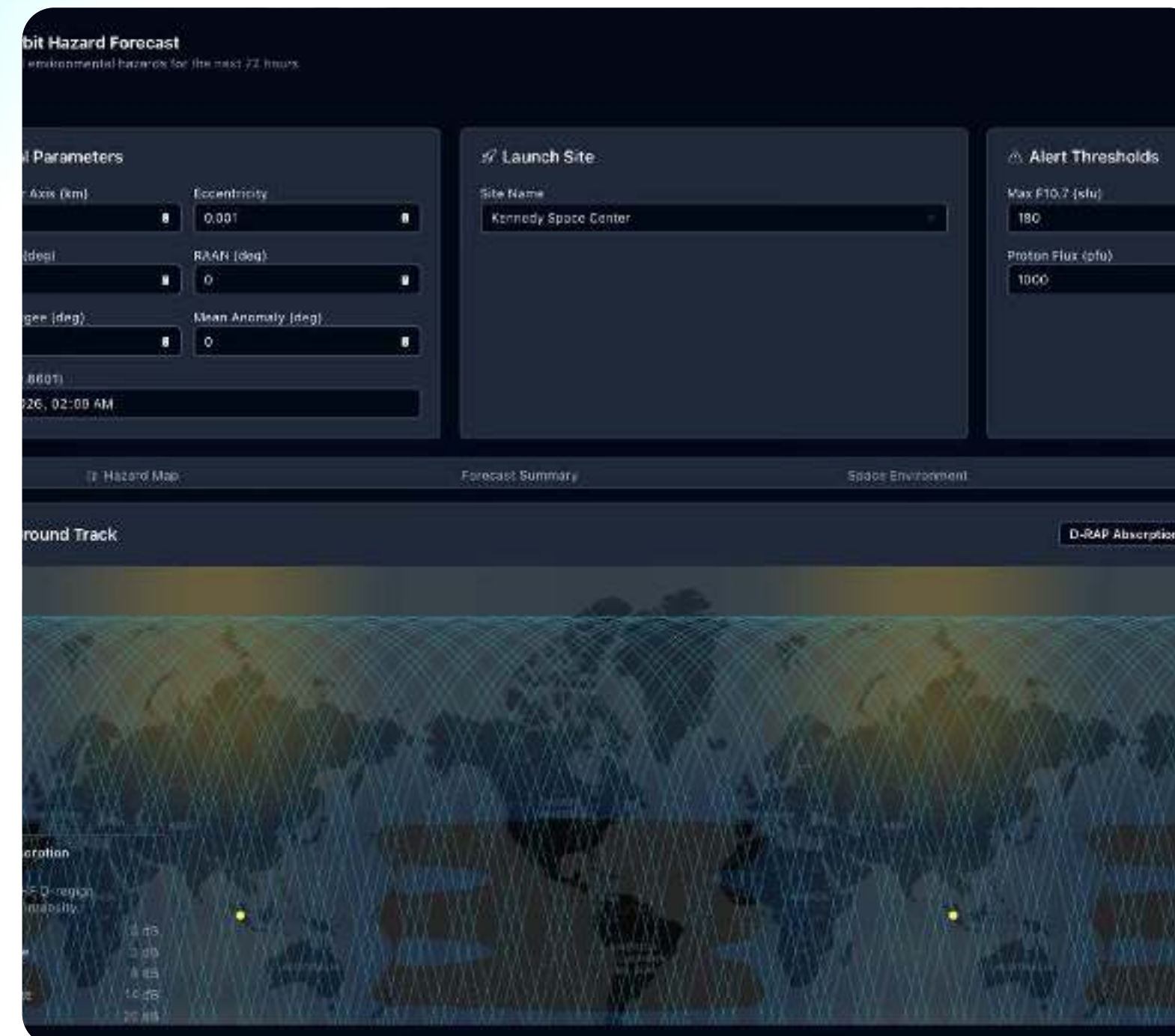
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Software: Platform & API



We combine open-source data with measurements from our own orbiting sensors, feeding them into proprietary ML to deliver highly accurate, granular, and localized insights.

Our ultra-compact, low-power hardware continuously monitors conditions in orbit, while our forecasting model integrates this sensor data with other factors affecting the thermospheric state to provide precise, high-resolution predictions.



Moat: Specialized Space Weather Payload



Mission Space's ZOHAR Payload Wins 2025 Global Tech Award in Space Technology

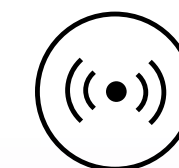
Why ZOHAR is Superior:

COST-EFFECTIVE:
30 times cheaper than leading suppliers

SCALABLE DESIGN:
Engineered for mass production and cost efficiency

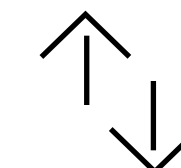
HIGH PERFORMANCE:
Capable of up to 1,000 measurements per second, capturing 15 scientific parameters and up to 100 technical ones

ENERGY EFFICIENT:
Consumes less than 1 WATT, enabling the use of more affordable satellite buses



ZOHAR is equipped with two advanced sensors

- Universal Semiconductor Spectrometer (1/4U)
- Cherenkov Detector (1/2U)



Capabilities

- Measures fluxes of charged particles
- Assesses ionosphere disturbance levels
- Analyzes the geomagnetic environment
- Collects geophysical data

LEO: Pathfinder Mission



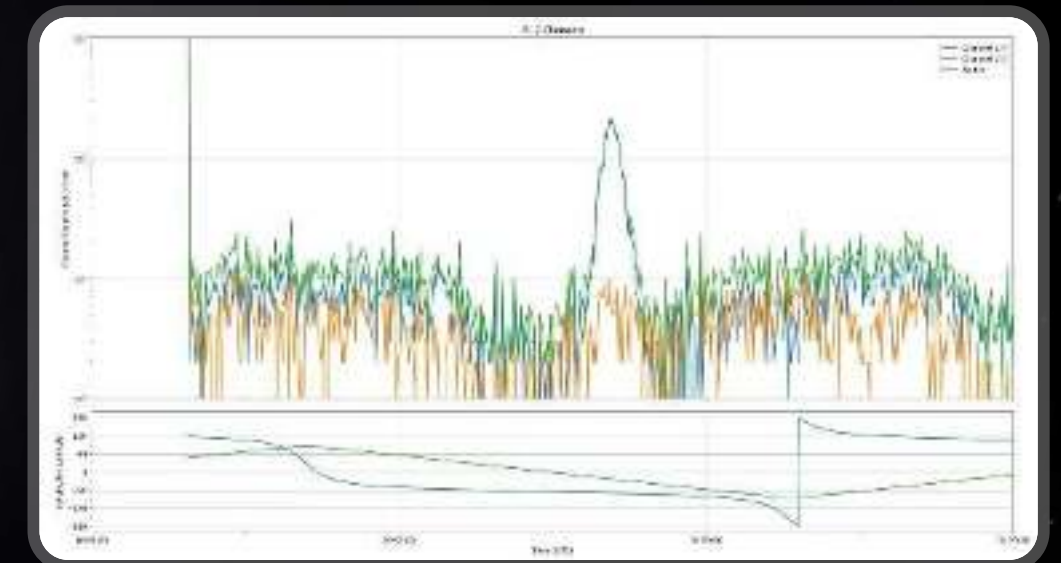
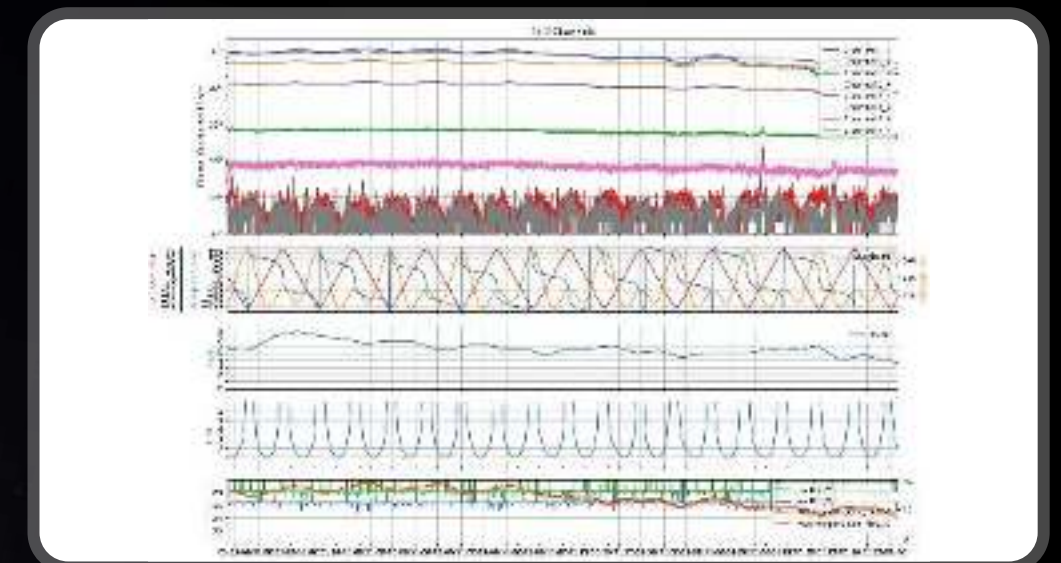
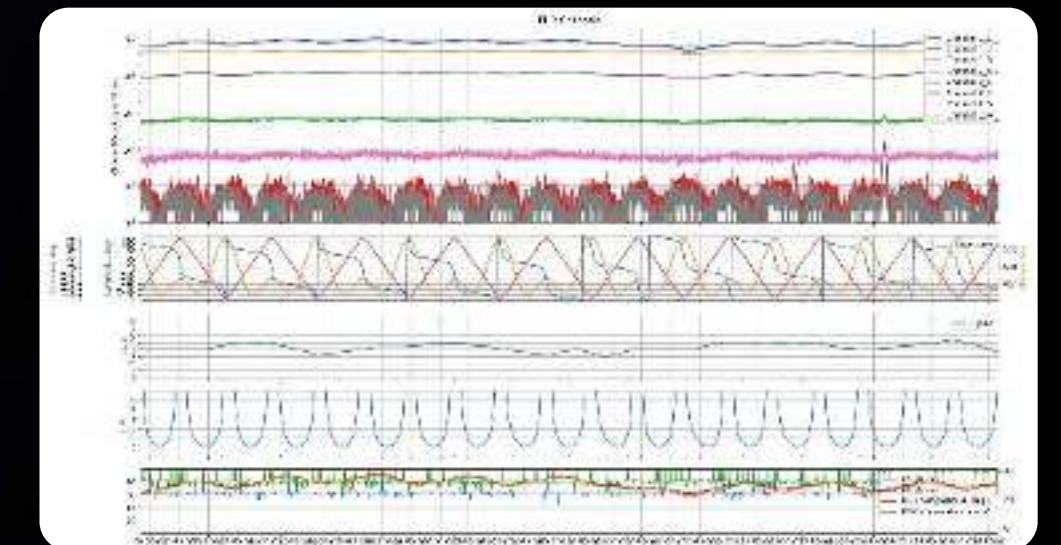
ZOHAR – TRL 9

Proprietary space weather sensors

» 1y+ of flight heritage

High Performance:

- ✓ Measures fluxes of charged particles
- ✓ Assesses ionosphere disturbance levels
- ✓ Analyzes the geomagnetic environment
- ✓ Collects geophysical data
- ✓ 1,000 measurements per second
- ✓ Capturing 15 scientific parameters and up to 100 technical ones



Mission Space's ZOHAR Payload Wins 2025 Global Tech Award in Space Technology

2026-2027 Missions



✓ MANIFESTED:

Three additional payloads with integrated accelerometers for STM-neutral density mapping: Starcloud, Rogue Space, Hex20

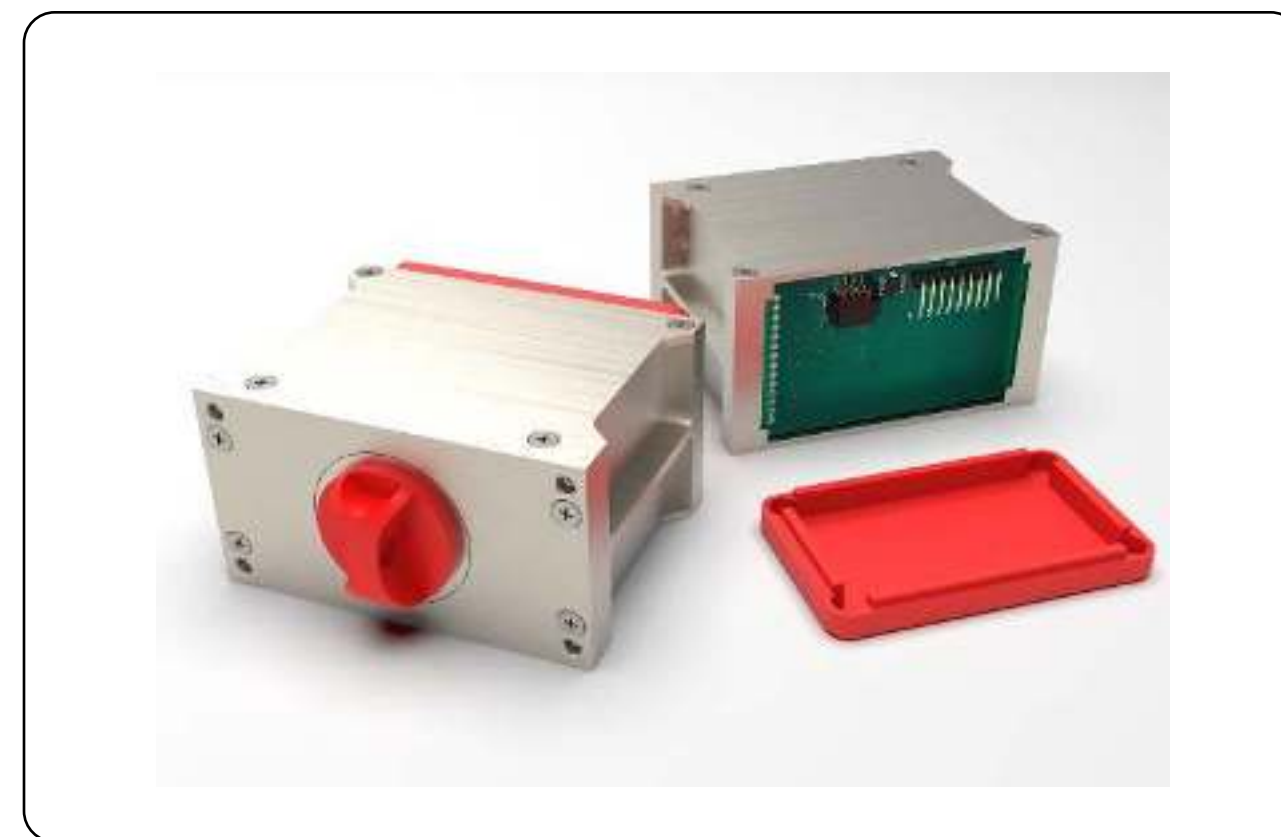
THE ADVANTAGES ARE:

- ✓ **A new generation of payloads**
A new generation of payloads, developed and refined based on the experience from the pathfinder mission, will deliver more informative and accurate results, enhancing our understanding of the near-Earth environment.
- ✓ **We will increase the number of simultaneous measurement points**
With upcoming launches, we will increase the number of simultaneous measurement points, enabling better localization of thermosphere-ionosphere coupling effects.
- ✓ **Integration of new 9-axis sensors**
Integration of new 9-axis sensors will support STM-related (Space Traffic Management) tasks with improved targeting capabilities.
- ✓ **A greater number of measurement points**
will provide higher accuracy, improved spatial and temporal resolution, and reduced latency in acquiring new data.
- ✓ **We will also explore and test new concepts and designs**
fostering further advancement of both our hardware and software.

Pipeline



PL-3 unit for surface charge monitoring.



PL-4 – Solar X-ray Spectrometer



PL-5 – X-ray and Gamma-ray Spectrometer

The next launches are scheduled for Q2 2026 and Q4 2026.

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mission.space 2026

Lunar Surface & Orbital Roadmap



Enabling surface-relevant environmental data for robotic and human lunar missions.

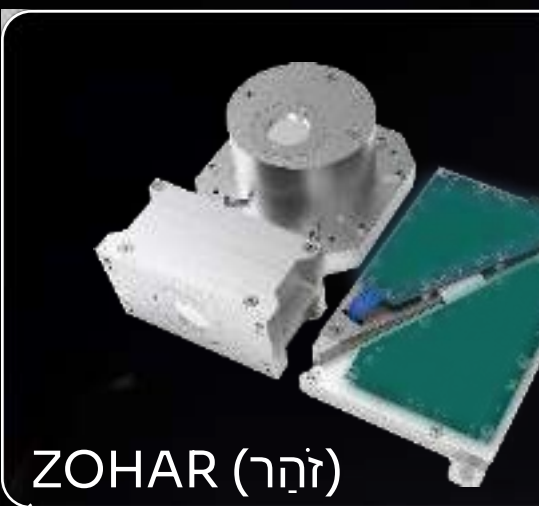
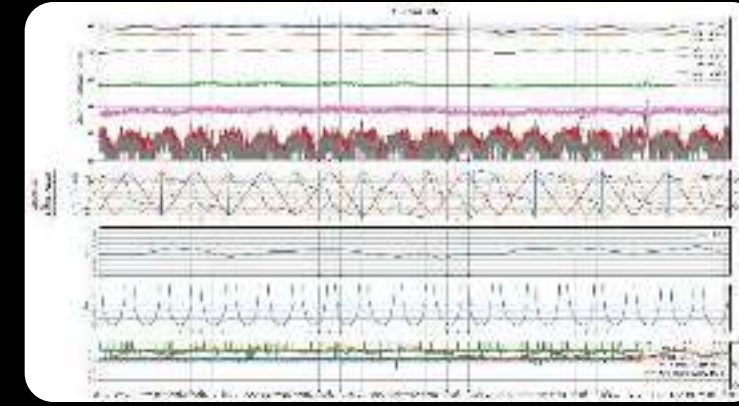
» Planned for 2028 & 2029

✓ **Lunar orbiter payload**

Radiation and plasma environment monitoring → orbital context for surface conditions

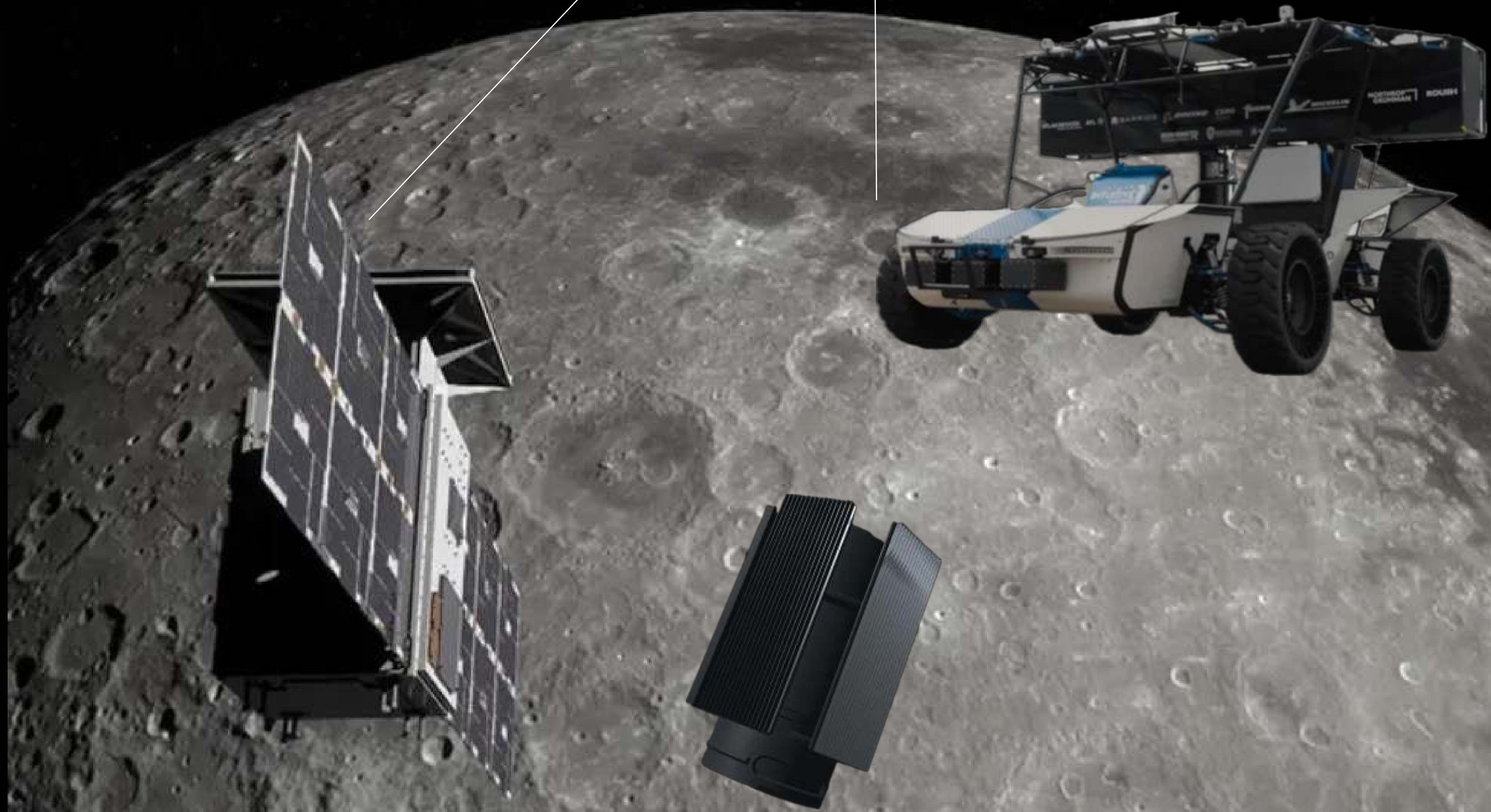
✓ **Lunar rover / lander payloads**

Dust, surface charging, and radiation measurements → operational data where systems actually operate



ZOHAR (זוהר)

Designed for lunar night survival



Proposed Sets Of Instruments



✓ Orbiter set:



- PL-1f, 2 x units (Zenith- and Nadir-oriented)
- PL-2, 2 x units coaxial to PL-1

Mass: <2kg

✓ Lander set:



- PL-1m unit (Looking sideways)
- PL-2 unit

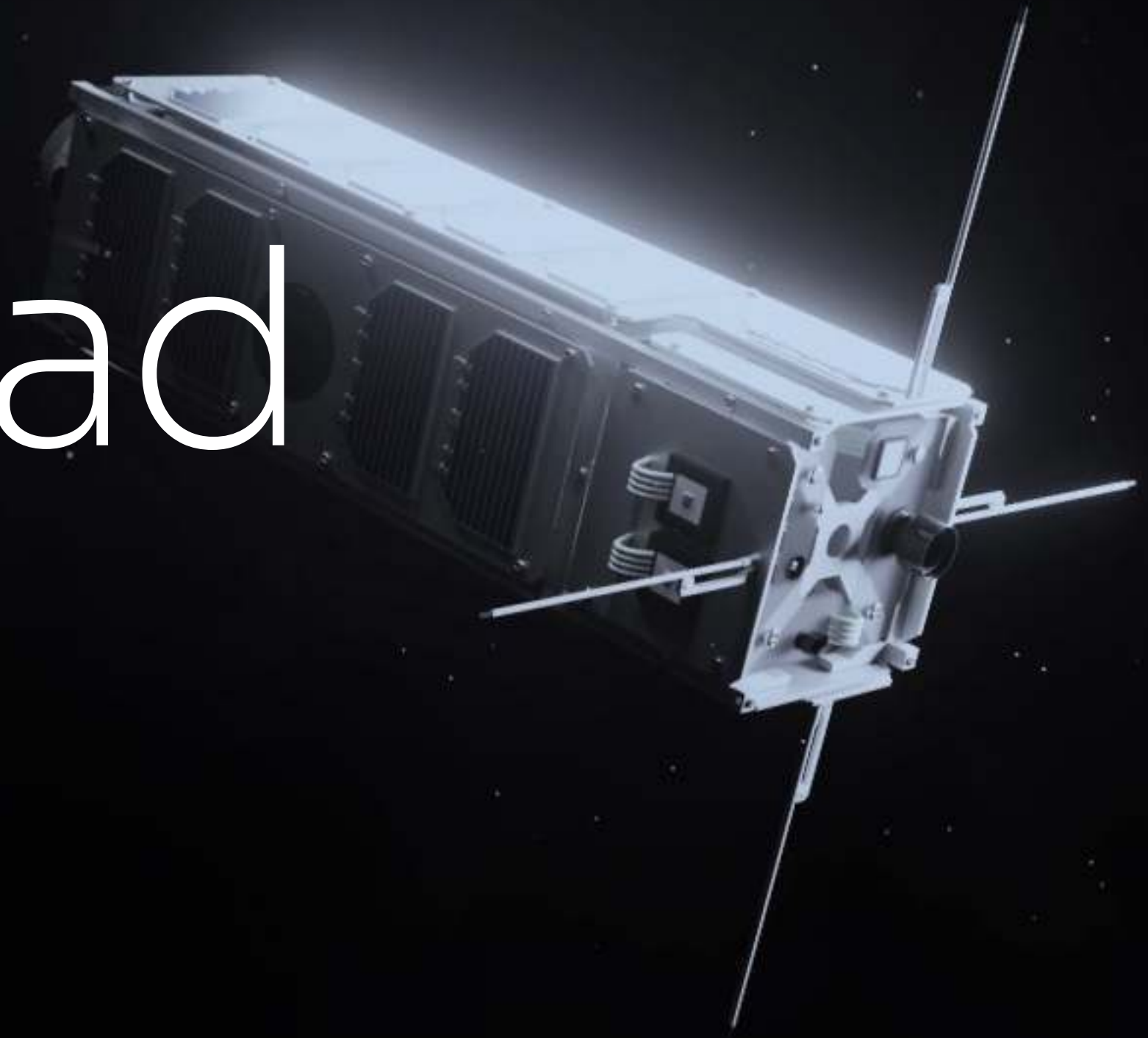
Mass: <1kg

Hardware | Payload Specs

Payload Specs and R&D Timeline

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Payload Specifications



Parameters	PL-1b	PL-1f	PL-1g	PL-2
Dimension l x w x h, mm	85 x 50 x 50	85 x 50 x 70	95 x 95 x 55	147 x 95 x 30
Mass, no more than, kg	0.3	0.5	0.5	0.7
Power consumption, W	< 0.5	< 0.5	< 0.5	< 0.5
Charged particles ranges, MeV: electrons protons	0.1 ... 5 1 ... 120	0.1 ... 10 1 ... 250	0.1 ... 5 1 ... 120	> 10 > 450
Data produced, MiB/day *	1...70	1...75	1...70	0.5...50
FoV, °	30...65	25...50	30...65	Omni
Information interface	Under the agreement with the developer of the spacecraft Options available: UART, RS232, RS422, RS485, CAN			



1 × PL-1f, PL-1b, or PL-1g unit for baseline measurements of medium-energy charged particles



11 × PL-2 unit for baseline measurements of high-energy charged particles (cosmic rays)

Payload Specifications



Parameters	PL-1f	PL-1m	PL-2	PL-3m
Dimension l x w x h, mm	85 x 50 x 70	85 x 50 x 75	147 x 95 x 30	85 x 50 x 60**
Mass, no more than, kg	<0.6	<0.6	<0.7	< 1**
Power consumption, W	< 1	< 1	< 1	< 1.5**
Charged particles ranges, MeV: electrons protons	0.1 ... 10 1... 250	0.1 ... 10 1 ... 250	>5 >450	Collected excess charge; Induced potential; Dust density
Data produced, MiB/day *	1...75	10...250	1...70	1...50
FoV, °	25...50	90...110	Omni	Hemisphere
Delivery time, m	3	5**	3	Next slides**



Auxiliary parameters: 9-axis sensor*



PL-1: Silicon telescope; PL-2:Cherenkov detector;
PL-3m: Flat Langmuir probe + Capacitance sensor

AIT, Preparatory Works



Risk Factor	Likelihood (L)	Impact (I)	Risk Level (L × I)	Notes and Mitigations
Scheduling and execution of tests:				
- Vibration testing	Low	Medium	Low-Moderate (4)	Immediately available; limited updates from the flight-proven unit
- Thermal vacuum cycling	Low	Medium	Low-Moderate (4)	Essential for space qualification
- EMI/EMC testing	Low	Medium	Low-Moderate (4)	Compliance critical
- Facility availability	Low	Medium	Low-Moderate (4)	Available in Europe and USA; schedule early

Radiation-Hardening Redesign (BG3: Orbiter Set)



Module	Description	Duration, month	Cost,\$k*
Power	Existing rad-tolerant architecture based on industrial components.	1	15
Analog (Amplification)	A few components should be replaced.	3	25
Digital (Control)	MCU, external ADCs/DACs when necessary, a few more components to check. Memory: less volume or price increase. Algorithmic and software solutions to apply.	6	420
Interface	Several proven solutions (chips) available for purchase.	1	15
Multi-Pixel Signal Processing	Based on VMM3a ASIC, rad-tolerant scheme.	3	25



* Including additional cost for manufacturing of 2x PL-1f + 2x PL-2 FMs in rad-tolerant design



Current design has enough margin for future changes, taking into account a 15% margin of error.

Surface Charge Monitor Unit Development (BG4)



Phase	Description	Duration, month	Cost,\$k*
Lab Testing and Development	<ul style="list-style-type: none"> ▪ Development and manufacturing of parts, auxiliary components, tooling, and test equipment ▪ Assembly and functional tests of prototypes ▪ Design updates, modelling and simulation if needed 	8	<500
Manufacturing, Integration and System Level Prototyping	<ul style="list-style-type: none"> ▪ Document updates including interface control, design requirements and protocols ▪ Engineering model manufacturing and assembly ▪ Comprehensive system testing in controlled laboratory settings ▪ Performance tests 	6	140
Environmental Qualification, Calibration	<ul style="list-style-type: none"> ▪ Vibration testing ▪ Thermal vacuum cycling ▪ Electromagnetic interference/compatibility (EMI/EMC) testing ▪ Magnetic Characterization 	6	~550
Validation and Flight Readiness Preparation	<ul style="list-style-type: none"> ▪ Final documentation completion ▪ Validation and certification ▪ Flight Readiness Review (as necessary) 	4	30



Current state: TRL 3 for PL-3, TRL 2 for PL-3m

Data Benchmarking & Validation



Benchmarking the incoming data involves a systematic approach to ensure accuracy and reliability by comparing measurements against established sources and reference instruments.

This process will be carried out at multiple stages and through various methods:

1. Pre-Flight Cross-Calibration

Align baseline accuracy via controlled ground testing and comparison with reference instruments.

2. In-Flight Cross-Comparison

Continuously validate sensor performance using real-time data from co-located or simultaneous missions.

3. Third-Party Data Benchmarking

Verify consistency by correlating results with established external datasets during known solar or geomagnetic events.

Data Benchmarking

VALIDATION METHODS

Both direct and indirect approaches will be employed to validate and compare our data with other available sources.

Direct methods involve side-by-side measurements or direct overlap with reference instruments, while indirect methods may include modeling, statistical analysis, or comparison with published datasets.



This multi-layered benchmarking strategy ensures that our data is rigorously validated, providing confidence in its scientific value and reliability for further analysis.

Lunar Set



✓ Comparison: PL-1 vs. LRO CRaTER

THE ADVANTAGES ARE:

✓ Sensor architecture:

CRaTER uses three silicon sensor pairs with tissue-equivalent absorbers.
PL-1 employs similar sensors from the same manufacturer.

✓ Measurement goals:

CRaTER focuses on dosimetry and albedo/ incident particle balance.
PL-1 captures multi-band spectra and derives TID and LET as secondary parameters.

✓ Configuration:

CRaTER offers a fixed design.
PL-1 provides modular flexibility for mission-specific measurements.

✓ High-energy extension:

PL-2 (Cherenkov detector) features a larger sensitive area and FOV, dedicated to cosmic rays and SEPs using a different detection principle.

✓ Efficiency:

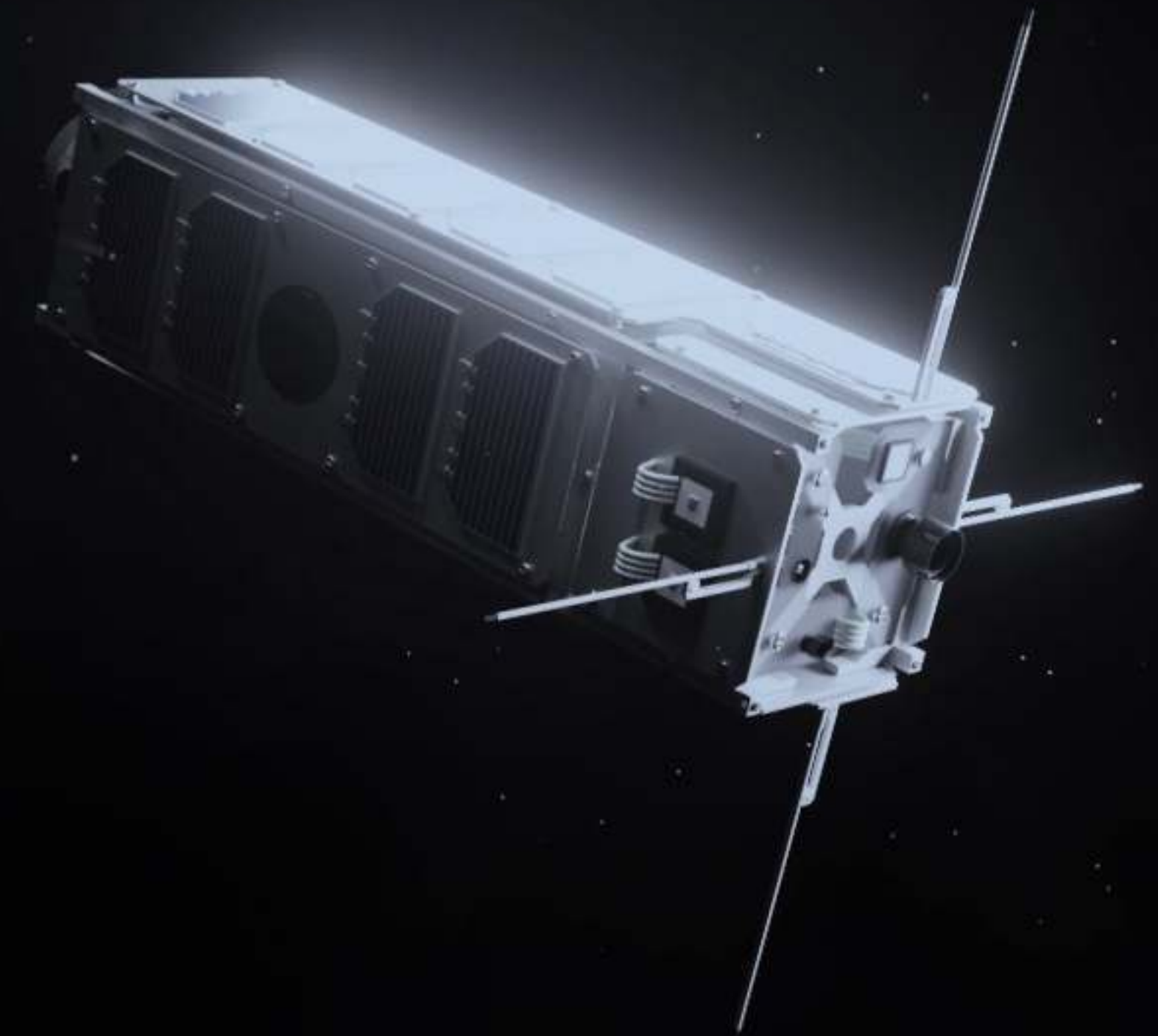
PL-1/PL-2 are lighter, lower-cost, and more adaptable in operation.

Appendix

Additional Materials: Contract Landscape & References

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Jan 2026



Space Weather Contract Landscape — US & EU



✓ **SPACE WEATHER IS FUNDED END-TO-END:
HARDWARE → OPS → GROUND → DATA → FORECASTING, ACROSS CIVILIAN AND DEFENSE BUYERS.**

✓ NOAA / NASA (L1 Series)

- Space Weather Next (L1): hardware + spacecraft
~340 M USD (BAE bus + SwRI + APL instruments)
- Mission operations (SWOMS IDIQ)
~396 M USD, 2026–2036
- Data & models
Commercial data buys (e.g. Spire 11.1 M USD)
+ ongoing NASA / DoD grants
- NOAA/ Office of Space Commerce
New 50 B USD commercial data buyout

✓ Operational / Commercial Data Buys

- Spire Global — 11.1 M USD NOAA IDIQ task order (GNSS-RO data feeding upper-atmosphere & ionosphere models)
- USSF commercial weather contracts with ionospheric / environment data requirements
- Muon Space – Space Systems Command (USSF)
\$44.6 M Phase III SBIR for a space-based environmental monitoring constellation prototype, dual-use weather & monitoring mission

✓ EU / ESA

- Horizon Europe – Space
Space weather embedded in SSA, space environment, critical tech calls
(~1.6 B EUR total space R&I envelope)
- ESA Space Safety Programme
Dedicated funding for instruments, models, services

Business Model : Data + Forecasts Platform



Space Weather Data + Forecasts

LEO

Revenue Sources:

- Government data buys + contracts: operational datasets + mission support (DoD, NOAA, NASA, ESA)
- Data licensing + Subscriptions: historical datasets + anomaly attribution packs + model inputs (bulk / enterprise)

✓ Benchmarking from Existing Data Markets

- \$59.3M IDIQ for NOAA commercial data buys (RODB-2) that explicitly includes ionospheric products used for space weather applications
- \$26.1M contract to build two next-generation space-weather magnetometers (L1 Series, SW Next)
- \$230.6M for NOAA Space Weather Next L1 Series (delivery order via NASA, awarded to BAE)

Contracts first → recurring subscriptions

≈\$10M in 2027

(enabling the first commercial Lunar Space Weather Intelligence Network)

KEY DRIVERS:

First direct, high-cadence particle spectra in the orbits — critical for orbital data centers.

✓ 300,000+ satellites expected by 2035 plus orbital data centers

✓ Government data buys already exist for operational datasets

Business Model : Data + Forecasts Platform



Space Weather Data + Forecasts

Cislunar Operations

Revenue Sources:

- Licensing data to NASA, ESA, and private developers.
- Subscriptions for lunar orbit and surface analytics supporting habitat design, rover mobility, and surface risk prediction.



Benchmarking from Existing Data Markets

- NASA's Firefly Aerospace CLPS contract included a \$10M payment for lunar surface data delivery, proving strong market demand.
- Lunar Environment Heliospheric Instrument Suite) receive \$3-5M per instrument under NASA payload funding.
- \$16.2M TSIS-1 mission operations + data processing contract with \$17.4M follow-on

Contracts first → recurring subscriptions

≈\$60M in 2029

(enabling the first commercial Lunar Space Weather Intelligence Network)

KEY DRIVERS:

First direct surface dust and charge data — critical for landers, habitats, and lunar base design.

- ✓ Integration with lunar landers and rovers
- ✓ Data sales for lunar surface modeling and mission risk mitigation
- ✓ Essential for **Artemis Base Camp and lunar infrastructure design**

Loses Attributed to Space Weather



- Aviation reroutes and cancellations
~ **\$3.8M / year**
~500,000 per diverted polar flight
United diverted 26 flights over several days during January 2005
- Satellites and constellations
~ **\$500m / year**
~\$50M sunk cost for Starlink single event only; lost of \$640 million ADEOS-2 spacecraft
- Farming: GNSS degradation
~ **\$1B / year**
>\$500M in losses in May 2024
- Power grids: Grid currents
~ **\$1T / year**
\$0.6–2.6 trillion for a severe scenario

≈ **\$16B in 2030**
(Annualized expected loss)

KEY DRIVERS:

Data is fragmented or not shared; Latency and gaps; Inconsistent formats and semantics

- ✓ Short warning windows
- ✓ Decisions made with partial visibility
- ✓ Prediction models fail because no data available

Why now?



In short:
the industry
is flying blind.



Current systems are outdated or inadequate

Operators rely on delayed, global-scale data that lacks precision for specific orbital paths, flight routes, or grid locations.



Financial and safety risks remain high

Without localized, real-time space weather intelligence, industries face continued losses from communication blackouts, navigation errors, and hardware failures.



Lunar environment remains largely unmeasured

The Lunar Reconnaissance Orbiter remains the primary source of lunar environment data, leaving new lunar activities designed with limited, non-operational measurements.



Operational decisions are made in the dark

Satellite operators, airlines, and grid managers can't anticipate geomagnetic disturbances or radiation spikes in time to act—resulting in unplanned downtime, reroutes, or damage.



No predictive capability at tactical level

Current models offer broad forecasts but not actionable insights (e.g., “X storm will hit this satellite orbit in 6 hours”). There's no equivalent to a radar or weather map tailored to orbital operations.



No platform meets commercial speed and scale needs

Governments like NOAA and ESA collect space weather data, but their systems are not built for commercial usage, API access, or integration into mission-critical software.

Clients & Signed LOIs



VOYAGER TECHNOLOGIES

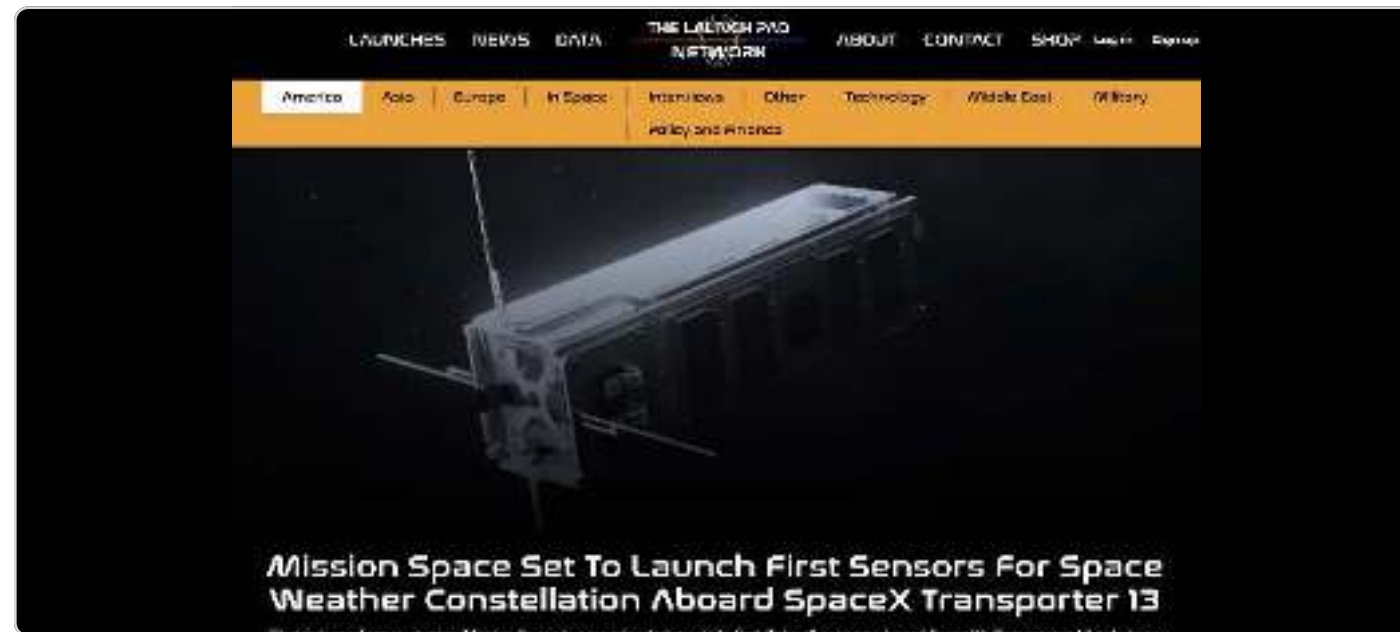
Is an American public space technology company headquartered in Denver, Colorado. It is a global leader in national security and space solutions



LEOLABS

LeoLabs, the category leader at tracking objects in space, is an American space technology company. It operates radar sites that monitor satellites and space debris in low Earth orbit

About us in the media



THE LAUNCH PAD



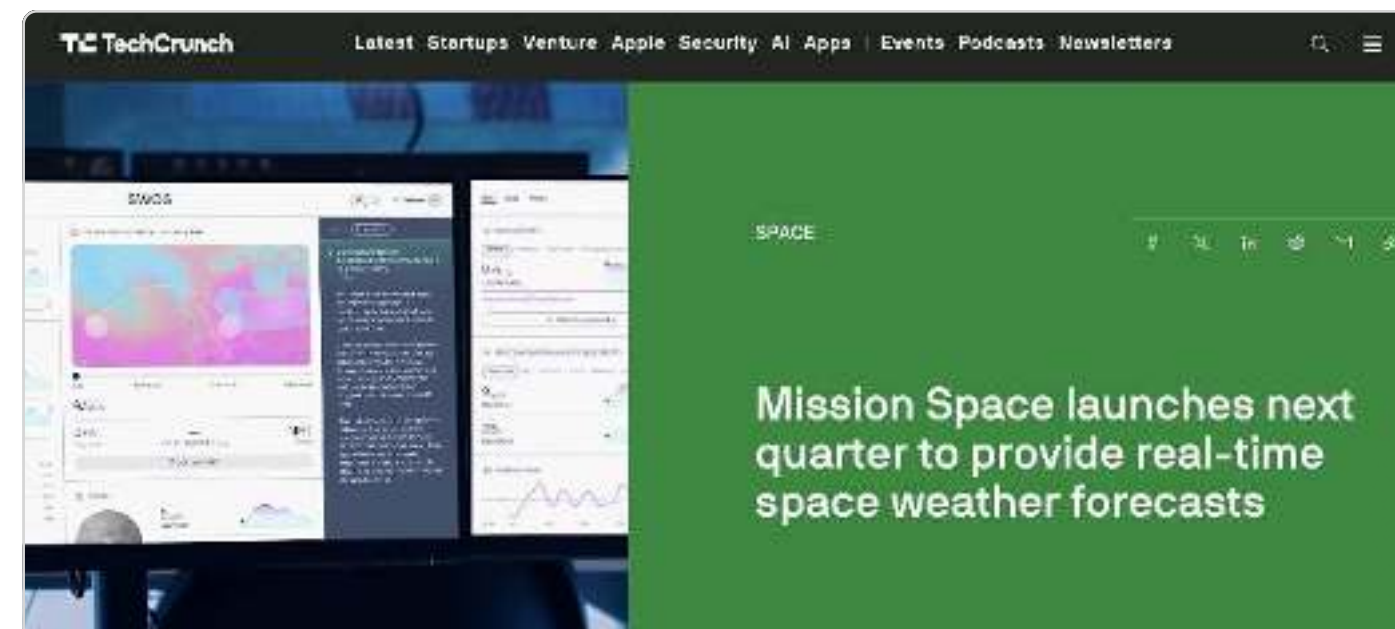
SPACE NEWS



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TECH CRUNCH



SATNow